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Being Adolescent

Flow

The Evolving Self

CREATIVITY

FLOW AND THE PSYCHOLOGY OF
DISCOVERY AND INVENTION

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HARPER PERENNIAL

a cell's behavior, or a way to make better microchips for less money is an exhilarating experience in its own right, even if no one else knows about it, and no rewards follow. Almost all of our respondents spoke eloquently and spontaneously about the importance of these intrinsic rewards. If they did not feel this joy, external rewards would not have been sufficient to motivate them to extend their efforts into uncharted regions.

But whereas experts in a discipline usually love what they do, this emotion is generally not available to students or young practitioners. Especially in the sciences, beginners see only the drudgery of the discipline. Teachers rarely spend time trying to reveal the beauty and the fun of doing math or science; students learn that these subjects are ruled by grim determinism instead of the freedom and adventure that the experts experience. Not surprisingly, it is difficult to motivate young people to master aspects of the culture that seem cold and alienating. As a result, knowledge in these areas might become eroded and creativity increasingly rare.

So one obvious way to enhance creativity is to bring as much as possible of the flow experience into the various domains. It is exhilarating to build culture—to be an artist, a scientist, a thinker, or a doer. All too often, however, the joy of discovery fails to be communicated to young people, who turn instead to passive entertainment. But consuming culture is never as rewarding as producing it. If it were only possible to transmit the excitement of the people we interviewed to the next generation, there is no doubt that creativity would blossom.

FOURTEEN

ENHANCING PERSONAL CREATIVITY

The major purpose of this book was to describe how creativity works, how culture evolves as domains are transformed by the curiosity and dedication of a few individuals. But another goal was to learn, from the lives of such men and women, how everyone's life could be made more creative. How can our days, too, be filled with wonder and excitement? To answer this question I move from objective description to prescription. I present my own reflections on what we have learned so far and try to derive from it some practical advice. Just as a physician may look at the physical habits of the most healthy individuals to find in them a prescription that will help everyone else to be more healthy, so we may extract some useful ideas from the lives of a few creative persons about how to enrich the lives of everyone else.

You probably already have formed some ideas about how to experience life more creatively. At the very least, you have learned about the obstacles that creative individuals have to surmount and the strategies they use to increase the likelihood that they will accomplish original work. In this chapter I will distill these insights and present them as explicit suggestions for how to apply them to everyday life.

These suggestions hold no promise for great creative achievement. As is clear by now, to move from personal to cultural creativity one needs talent, training, and an enormous dose of good luck. Without access to a domain, and without the support of a field, a person has no chance of recognition. Even though personal creativity may not lead to fame and fortune, it can do something that from the individual's point of view is even more important: make day-to-day experiences more vivid, more enjoyable, more rewarding. When we live creatively, boredom is banished and every moment holds the promise of a fresh discovery. Whether or not these discoveries enrich the world beyond our personal lives, living creatively links us with the process of evolution.

Most of the suggestions derived from the study of creative lives can be implemented by anybody regardless of age, gender, or social condition. Some of the steps, however, are more appropriate to parents or other adults who want to provide optimal conditions for developing the creativity of children. We cannot change conditions in our own childhood that would make us more curious and hence enhance creativity; but we can change conditions for the next generation. Instead of pointing out each time which suggestions are for adults and which for children, I trust the reader's judgment to make the appropriate distinctions.

I am assuming that each person has, *potentially*, all the psychic energy he or she needs to lead a creative life. However, there are four major sets of obstacles that prevent many from expressing this potential. Some of us are exhausted by too many demands, and so have trouble getting hold of and activating our psychic energy in the first place. Or we get easily distracted and have trouble learning how to protect and channel whatever energy we have. The next problem is laziness, or lacking discipline for controlling the flow of energy. And finally, the last obstacle is not knowing what to do with the energy one has. How to avoid these obstacles and liberate the creative energy we all have is what I review in this chapter.

THE ACQUISITION OF CREATIVE ENERGY

With our present knowledge, even an expert neuroanatomist could not tell Einstein's brain from yours or mine. In terms of the capacity

for processing information, all brains are extremely alike. The limits on how many bits of information we can process at any given time are also similar. Nor is the speed of information processing noticeably different from one brain to the next. In principle, because of the similarity in cerebral hardware, most people could share the same knowledge and perform mental operations at similar levels. Yet what enormous differences there are in how people think and what they think about!

In terms of using mental energy creatively, perhaps the most fundamental difference between people consists in how much uncommitted attention they have left over to deal with novelty. In too many cases, attention is restricted by external necessity. We cannot expect a man who works two jobs, or a working woman with children, to have much mental energy left over to learn a domain, let alone innovate in it. Einstein is supposed to have written his classic papers on the kitchen table of his small apartment in Berne, while rocking the pram of his baby. But the fact is that there are real limits to how many things a person can attend to at the same time, and when survival needs require all of one's attention, none is left over for being creative.

But often the obstacles are internal. In a person concerned with protecting his or her self, practically all the attention is invested in monitoring threats to the ego. This defensiveness may have very understandable causes: Children who have been abused or who have experienced chronic hunger or discrimination are less likely to be curious and interested in novelty for its own sake, because they need all the psychic energy they have simply to survive. Taken to the extreme, a sense of being too vulnerable results in the form of neurosis known as paranoia, where everything that happens is interpreted as a threatening conspiracy against the self. A paranoid tendency is one obstacle to the free deployment of mental energy. The person who suffers from it usually cannot afford to become interested in the world from an objective, impartial viewpoint, and therefore is unable to learn much that is new.

Another limitation on the free use of mental energy is an excessive investment of attention in selfish goals. Of course, we all must first and foremost take care of our own needs. But for some people the concept of "need" is inflated to the point that it becomes an obsession that devours every waking moment. When everything a

person sees, thinks, or does must serve self-interest, there is no attention left over to learn about anything else.

It is difficult to approach the world creatively when one is hungry or shivering from cold, because then all of one's mental energy is focused on securing the necessities one lacks. And it is equally difficult when a person is rich and famous but devotes all of his or her energies to getting more money and fame. To free up creative energy, we need to let go and divert some attention from the pursuit of the predictable goals that genes and memes have programmed in our minds and use it instead to explore the world around us on its own terms.

Curiosity and Interest

So the first step toward a more creative life is the cultivation of curiosity and interest, that is, the allocation of attention to things for their own sake. On this score, children tend to have the advantage over adults; their curiosity is like a constant beam that highlights and invests with interest anything within range. The object need not be useful, attractive, or precious; as long as it is mysterious it is worthy of attention. With age most of us lose the sense of wonder, the feeling of awe in confronting the majesty and variety of the world. Yet without awe life becomes routine. Creative individuals are childlike in that their curiosity remains fresh even at ninety years of age; they delight in the strange and the unknown. And because there is no end to the unknown, their delight also is endless.

At first, curiosity is diffuse and generic. The child's attention is attracted to any novelty—cloud or bug, grandfather's cough or a rusted nail. With time, interest usually becomes channeled into a specific domain. A ninety-year-old physicist may retain childhood curiosity in the realm of subatomic particles but is unlikely to have enough free attention left over to marvel at much else. Therefore, creativity within a domain often goes hand in hand with conformity in the rest of life. Einstein at the peak of his breakthroughs in physics played traditional music on his violin. But narrowing attention to a single domain does not mean limiting the novelty one is able to process; on the contrary, complex domains like poetry, history, physics, or politics reveal constantly expanding perspectives to those who venture to explore them.

So how can interest and curiosity be cultivated, assuming that you feel the desire to do so? Some specific advice may help.

Try to be surprised by something every day. It could be something you see, hear, or read about. Stop to look at the unusual car parked at the curb, taste the new item on the cafeteria menu, actually listen to your colleague at the office. How is this different from other similar cars, dishes, or conversations? What is its *essence*? Don't assume that you already know what these things are all about, or that even if you knew them, they wouldn't matter anyway. Experience this one thing for what it is, not what you think it is. Be open to what the world is telling you. Life is nothing more than a stream of experiences—the more widely and deeply you swim in it, the richer your life will be.

Try to surprise at least one person every day. Instead of being your predictable self, say something unexpected, express an opinion that you have not dared to reveal, ask a question you wouldn't ordinarily ask. Or break the routine of your activities: Invite a person to go with you to a show, a restaurant, or a museum that you never visited before. Experiment with your appearance. Comfortable routines are great when they save energy for doing what you really care about; but if you are still searching, they restrict and limit the future.

Write down each day what surprised you and how you surprised others. Most creative people keep a diary, or notes, or lab records to make their experiences more concrete and enduring. If you don't do so already, it might help to start with a very specific task: to record each evening the most surprising event that happened that day and your most surprising action. This is a simple enough assignment and one you will find is fun to do. After a few days, you can reread what you have written and reflect on those past experiences. One of the surest ways to enrich life is to make experiences less fleeting, so that the most memorable, interesting, and important events are not lost forever a few hours after they occurred. Writing them down so that you can relive them in recollection is one way to keep them from disappearing. And after a few weeks, you may begin to see a pattern of interest emerging in the notes, one that may indicate some domain that would repay exploring in depth.

When something strikes a spark of interest, follow it. Usually, when something captures our attention—an idea, a song, a flower—the impression is brief. We are too busy to explore the idea, song, or flower further. Or we feel that it is none of our business. After all, we are not thinkers, singers, or botanists, so these things lie outside our grasp. Of course, that's nonsense. The world is our business, and we can't know which part of it is best suited to our selves, to our potentialities, unless we make a serious effort to learn about as many aspects of it as possible.

If you take time to reflect on how best to implement these four suggestions, and then actually start putting them into effect, you should feel a stirring of possibilities under the accustomed surface of daily experiences. It is the gathering of creative energy, the rebirth of curiosity that has been atrophied since childhood.

Cultivating Flow in Everyday Life

The rebirth of curiosity doesn't last long, however, unless we learn to enjoy being curious. Entropy, the force behind the famous Second Law of Thermodynamics, applies not only to physical systems but to the functioning of the mind as well. When there is nothing specific to do, our thoughts soon return to the most predictable state, which is randomness or confusion. We pay attention and concentrate when we must—when dressing, driving the car, staying awake at work. But when there is no external force demanding that we concentrate, the mind begins to lose focus. It falls to the lowest energetic state, where the least amount of effort is required. When this happens, a sort of mental chaos takes over. Unpleasant thoughts flash into awareness, forgotten regrets resurface, and we become depressed. Then we turn on the TV set, read listlessly the advertising supplement of the newspaper, have pointless conversations—anything to keep our thoughts on an even keel and avoid becoming frightened by what is happening in the mind. Taking refuge in passive entertainment keeps chaos temporarily at bay, but the attention it absorbs gets wasted. On the other hand, when we learn to enjoy using our latent creative energy so that it generates its own internal force to keep concentration focused, we not only avoid depression but also increase the complexity of our capacities to relate to the world.

How can we do this? How can we relearn to enjoy curiosity so

that the pursuit of new experiences and new knowledge becomes self-sustaining?

Wake up in the morning with a specific goal to look forward to. Creative individuals don't have to be dragged out of bed; they are eager to start the day. This is not because they are cheerful, enthusiastic types. Nor do they necessarily have something exciting to do. But they believe that there is something meaningful to accomplish each day, and they can't wait to get started on it.

Most of us don't feel our actions are that meaningful. Yet everyone can discover at least one thing every day that is worth waking up for. It could be meeting a certain person, shopping for a special item, spotting a plant, cleaning the office desk, writing a letter, trying on a new dress. It is easier if each night before falling asleep, you review the next day and choose a particular task that, compared to the rest of the day, should be relatively interesting and exciting. Then next morning, open your eyes and visualize the chosen event—play it out briefly in your mind, like an inner videotape, until you can hardly wait to get dressed and get going. It does not matter if at first the goals are trivial and not that interesting. The important thing is to take the easy first steps until you master the habit, and then slowly work up to more complex goals. Eventually most of the day should consist of tasks you look forward to, until you feel that getting up in the morning is a privilege, not a chore.

If you do anything well, it becomes enjoyable. Whether writing a poem or cleaning the house, running a scientific experiment or a race, the quality of experience tends to improve in proportion to the effort invested in it. The runner may be exhausted and aching, yet she also is exhilarated if she is putting all her strength into the race. The more activities that we do with excellence and style, the more of life becomes intrinsically rewarding.

The conditions that make flow possible suggest how to transform everyday activities so that they are more enjoyable. Having clear goals and expectations for whatever we do, paying attention to the consequences of our actions, adjusting skills to the opportunities for action in the environment, concentrating on the task at hand without distractions—these are the simple rules that can make the difference between an unpleasant and an enjoyable experience. If I decide to

learn to play the piano or speak a foreign language but feel frustrated or bored doing so, the chances are that I will give up at the first opportunity. But if I apply the flow conditions to the learning task, then it is likely that I will continue to expand my creative potential because doing so is fun.

It is easier to start with the most mundane activities all of us have to take care of. How can you get more enjoyment from brushing your teeth? Taking a shower? Dressing? Eating breakfast? Getting to work? Take the simplest of these routines and experiment with engineering its flow potential. How do you apply flow conditions to loading the dishwasher? If you take this question seriously and try to answer by testing various alternatives, you will be surprised at how much fun brushing teeth can be. It will never be as enjoyable as skiing or playing in a string quartet, but it might beat watching most television programs.

After you have practiced improving the quality of experience in a few everyday activities, you might feel ready to tackle something more difficult—such as a hobby or a new interest. Eventually you will master the most important skill of all, the metaskill that consists in being able to turn any activity into an occasion of flow. If the autotelic metaskill is developed enough, you should be able to enjoy any new challenge and be on the way to the self-sustaining chain reaction of creativity.

To keep enjoying something, you need to increase its complexity. As Herodotus remarked, we cannot step in the same river twice. Nor can you enjoy the same activity over and over, unless you discover new challenges, new opportunities in it. Otherwise it becomes boring. Brushing teeth cannot stay enjoyable for very long—it's an activity that just does not have enough potential for complexity. True, one can preserve the challenge of even the simplest activity by combining it with something else—for instance, while brushing teeth you might plan the coming day or reflect on what happened yesterday. But generally it is more satisfying to become involved in activities that are inexhaustible—music, poetry, carpentry, computers, gardening, philosophy, or deep personal relationships.

Most domains are so complex that they cannot be exhausted in a lifetime, not even the lifetime of the human race. It is always possible to learn a new song, or to write one. It is always possible to find a

better way to do anything. That is why creativity—the attempt to expand the boundaries of a domain—makes a lifetime of enjoyment possible.

Habits of Strength

After creative energy is awakened, it is necessary to protect it. We must erect barriers against distractions, dig channels so that energy can flow more freely, find ways to escape outside temptations and interruptions. If we do not, entropy is sure to break down the concentration that the pursuit of an interest requires. Then thought returns to its baseline state—the vague, unfocused, constantly distracted condition of the normal mind.

It is often surprising to hear extremely successful, productive people claim that they are basically lazy. Yet the claim is believable. It is not that they have more energy and discipline than you or I; but they do develop habits of discipline that allow them to accomplish seemingly impossible tasks. These habits are often so trivial that the people who practice them seem strange and obsessive. At first many people were mildly shocked that the great Alfred Einstein always wore the same old sweater and baggy trousers. Why was he being so weird? Of course, Einstein wasn't trying to upset anybody. He was just cutting down on the daily effort involved in deciding what clothes to wear, so that his mind could focus on matters that to him were more important. It may seem that choosing slacks and shirts takes so little time that it is pretentious to worry about it. But suppose it takes only two minutes each day to decide how to dress. That adds up to 730 minutes, or twelve hours a year. Now think of the other repetitive things we have to do throughout the day—comb hair, drive cars, eat, and so on. And then think not only of the time it takes to do each of these things but of the interruption in the train of thought they cause, both before and after. Having to choose a tie could derail a whole hour's worth of reflection! No wonder Einstein preferred to play it safe and wear the same old clothes.

At this point, some readers may smell a contradiction. On the one hand I am saying that to be creative you should be open to experience, focus on even the most mundane tasks—like brushing teeth—to make them more efficient and artistic. On the other hand I am saying that you should conserve creative energy by routinizing as much of everyday life as possible so that you can focus entirely on

what really matters. Isn't this contradictory advice? Not really—but even if it were, you should by now expect a certain amount of paradox in creative behavior.

The reason it is not a contradiction to be open and focused at the same time is that these contrary ways of using psychic energy share a similarity that is more important than their differences. They require *you* to decide whether at this point it is better to be open or to be focused. They are both expressions of your ability to control attention, and it is this, not whether you are open or focused, that matters. Before you have discovered an overriding interest in a particular domain, it makes sense to be open to as much of the world as possible. After you have developed an abiding interest, however, it may make more sense to save as much energy as you can to invest in that one domain. In either case, what is important is not to relinquish control over creative energy so that it dissipates without direction.

A few more words may be needed here concerning the concept of "control" as applied to attention. It should be realized that one way of controlling is to relinquish control. People who meditate expand their being by letting go of focused thought. This way they aim to achieve a spiritual union with the energy behind the world of appearances, the force that drives the universe. But this way of giving up control is itself directed, controlled by the mind. It is very different from just sitting and gossiping, passively consuming entertainment, or letting the mind wander without purpose.

What can you do to build up habits that will make it possible to control attention so that it can be open and receptive, or focused and directed, depending on what your overall goals require?

Take charge of your schedule. Our circadian rhythms are to a large extent controlled by outside factors: the rising sun, the commuter train schedule, a job's deadline, lunchtime, a client's needs. If it works for you, it makes perfect sense to abandon yourself to these markers so that you don't have to decide what to do when. But it is also possible that the schedule you are following is not the best for your purposes. The best time for using your creative energies could be early in the morning or late at night. Can you carve out some time for yourself when your energy is most efficient? Can you fit sleep to your purpose, instead of the other way around?

The times when most people eat may not be the best for you. You

might get hungry earlier than lunchtime and lose concentration because you feel jittery; or to perform at the top of your potential it may be best to skip lunch and have a midafternoon snack instead. There are probably best times to shop, to visit, to work, to relax for each one of us; the more we do things at the most suitable times, the more creative energy we can free up.

Most of us have never had the chance to discover which parts of the day or night are most suited to our rhythms. To regain this knowledge we have to pay attention to how well the schedule we follow fits our inner states—when we feel best eating, sleeping, working, and so forth. Once we have identified the ideal patterns, we can begin the task of changing things around so that we can do things when it is most suitable. Of course, most of us have inflexible demands on our day that cannot be changed. Even John Reed has to keep to an office schedule, and Vera Rubin has to adapt her curiosity to times when telescopes are available for observation. The needs of children, spouses, and bosses must often take precedence. Yet time is more flexible than most of us think.

The important thing to remember is that creative energy, like any other form of psychic energy, only works over time. It takes a certain minimum amount of time to write a sonnet or to invent a new machine. People vary in the speed they work—Mozart wrote concerti much faster than Beethoven did—but even Mozart could not escape the tyranny of time. Therefore, every hour saved from drudgery and routine is an hour added to creativity.

Make time for reflection and relaxation. Many people, especially those who are successful and responsible, take the image of the "rat race" seriously and feel uncomfortable, even anxious, if they are not busily at work. Even at home, they feel they must be always cleaning, working in the yard, or fixing things. Keeping constantly busy is commendable and certainly much better than just lounging around feeling sorry for yourself. But constant busyness is not a good prescription for creativity. It is important to schedule times in the day, the week, and the year just to take stock of your life and review what you have accomplished and what remains to be done.

These are times when you should not expect any task to be done, any decision to be reached. You should just indulge in the luxury of reflection for its own sake. Whether you intend it or not, new ideas

and conclusions will emerge in your consciousness anyway—and the less you try to direct the process the more creative they are likely to be. It may be best to combine these periods of reflection with some other task that requires a certain amount of attention, but not all of it. Preferably this should involve some physical or kinesthetic component. Typical activities that facilitate subconscious creative processes are walking, showering, swimming, driving, gardening, weaving, and carpentry.

Neither constant stress nor monotony is a very good context for creativity. You should alternate stress with periods of relaxation. But remember that the best relaxation is not doing nothing. It usually involves doing something very different from your usual tasks. Some of the most demanding activities like rock climbing, skiing, or skydiving are relaxing to people who have desk jobs because they provide opportunities for deep involvement with experiences that are completely different from the usual.

Learning to control one's sleep patterns can also be very important. Some very effective businesspeople and politicians pride themselves on sleeping very few hours each night, and they claim that short sleep makes them feel more energetic and decisive. But creative individuals usually sleep longer and claim that if they cut down on sleeptime the originality of their ideas suffers. It is impossible to come up with a single amount that is ideal for everyone. Like everything else, the important thing is to find the length of time that best fits your own requirements. And don't feel guilty if you sleep a few hours more than is considered normal. What you lose in waking time will probably be made up in terms of the quality of experience while you are awake.

Shape your space. We saw in chapter 6 that surroundings can have an influence on the creative process. Again, it is not what the environment is like that matters, but the extent to which you are in harmony with it.

At the macro level, the question may be whether you feel you would be happiest if living at the seashore, surrounded by mountains or plains, or in the bustle of a big city. Do you like the change of seasons? Do you hate snow? Some people are physically affected by long sunless periods. There can be many reasons why you might feel trapped in the place you live, without a choice to move. But it's

a great waste to spend your entire life in uncongenial surroundings. One of the first steps in implementing creativity at the personal level is to review your options of life contexts and then start thinking about strategies for making the best choice come true.

At the midlevel, determine what sort of community you want to sink roots in. Every city and rural area have neighborhoods that are stratified in terms of price, centrality, type of activities available, and so forth. As with everything else, we are limited in the choice of exactly where to live—very few can afford to live near the Pebble Beach golf course in California, the Lionshead ski run in Vail, Colorado, or on Park Avenue in Manhattan. But even as redundant housing developments are slowly swallowing the landscape, there is still much choice left of where one can live, more than most of us care to exercise. And it is important to live in a place that does not tie up a lot of potential energy either by lulling the senses into complacency or by forcing us to fight against an intolerable environment.

At the micro level the choices are much more readily available to everyone. We all can decide what kind of environment to create in our home. As long as there is a roof overhead even the poorest among us can organize space and collect things that are meaningful and conducive to the use of creative energies.

The house of a Hindu Brahman or a traditional Japanese family is likely to be bare of almost all furniture and decoration. The idea is to provide a neutral environment that does not disturb the flow of consciousness with distractions. At the other extreme, a Victorian home bursts with dark, heavy furniture and knickknacks. In this case, the owner's sense of control is bolstered by lavish possessions. Which is the best way to go? Obviously none of these environments is better in an absolute sense. What counts is which solution allows you to use attention most effectively. It is easy to find out which microenvironment best fits your self: Try different kinds and pay attention to your feelings and reactions.

Another way space can help creativity is by following the maxim "A place for everything, and everything in its place." Developing a routine for storing such things as car keys and eyeglasses repays itself more than a hundredfold in time saved. If you know your home and office so well that you can find anything even if blindfolded, your span of thought need not be continuously interrupted to look for something. This doesn't mean that your desk or living room should

always be neat. In fact, the work space of creative individuals is often messy and it tends to put off more ordered souls. The important thing is that they know where everything is, so they can work without too much distraction. Many can find papers and organize their work better when their desk is covered with clutter than when things are properly filed away. But if a clean desk makes you feel and work better, then by all means keep it clean.

The kind of objects you fill your space with also either help or hinder the allocation of creative energies. Cherished objects remind us of our goals, make us feel more confident, and focus our attention. Trophies, diplomas, favorite books, and family pictures on the office desk are all reminders of who you are, what you have accomplished, and therefore what you are likely to achieve. Pictures and maps of places you would like to visit and books about things you might like to learn more about are signposts of what you might do in the future.

And then there are the objects that we carry and that help create a personalized, portable psychic space. In most traditional societies, people always took along a few special objects that were supposed to increase the power of the owner. This "medicine bundle," or talisman, might include the claws of a bear killed in the hunt, some clamshells found on the beach, or some herbs that revived the wearer from a difficult illness. Having these objects hanging from one's neck provided a feeling of strength and identity. We also tend to keep in our purses and wallets items that represent our self and its values. Pictures of our children, friends' addresses, a book or movie title scribbled on a napkin—these all remind us of who we are and what we are like. Choosing carefully what to carry with us makes it easier to be comfortable with ourselves and therefore to use psychic energy effectively when the opportunity arises.

Another space that is important to personalize is our car. Cars have become important extensions of the self; for many people, the car is more like a castle than the home is. It's in the car that they feel most free, most secure, most powerful. It is where they can think with the greatest concentration, solve problems most efficiently, and come up with the most creative ideas. That is why it is so difficult to get people to use public transportation instead of their cars. Of course, it is possible that in the near future cars will be as obsolete as eating beef and for the same reason—shortage of fuel. In the meantime, how-

ever, it makes sense to learn to use one's vehicle in the way that is most conducive to the environment as well as to the expression of creative potential.

Find out what you like and what you hate about life. It is astonishing how little most people know about their feelings. There are people who can't even tell if they are ever happy, and if they are, when or where. Their lives pass by as a featureless stream of experience, a string of events barely perceived in a fog of indifference. As opposed to this state of chronic apathy, creative individuals are in very close touch with their emotions. They always know the reason for what they are doing, and they are very sensitive to pain, to boredom, to joy, to interest, and to other emotions. They are very quick to pack up and leave if they are bored and to get involved if they are interested. And because they have practiced this skill for a long time, they need to invest no psychic energy in self-monitoring; they are aware of their inner states without having to become self-conscious.

How can you learn the dynamics of your emotions? The first thing is to keep a careful record of what you did each day and how you felt about it. This is what the Experience Sampling Method accomplishes—pagers are programmed to signal you at random times during the day, and then you fill out a short questionnaire. It is possible, after a week, to have a good idea of how you spend your time and how you feel about various activities. But you don't need an elaborate experiment to find out how you feel. Be creative and invent your own method of self-analysis. The basis of ancient Greek philosophy was the injunction to *know thyself*. The first step toward self-knowledge involves having a clear idea of what you spend your life doing and how you feel while doing it.

Start doing more of what you love, less of what you hate. After a few weeks of self-monitoring, sit down with your diary or your notes and begin to analyze them. Again, it takes some creativity, but it should not be very difficult to draw out the main patterns of daily life. It's not more convoluted than planning comparison shopping or studying stock market graphs. And it is so much more important in the long run.

You may find that, contrary to what you had thought, the few times you were with your spouse during the week you had great

conversations and felt relaxed. That at work, despite stress and hassles, you felt better about yourself than when watching television. Or, conversely, that most of the time when you were at work you felt listless and bored. Why were you so irritated with your children? So impatient with the people you work with? So cheerful when walking down the street?

You may never find out the deep reasons that answer these questions. Perhaps there *are* no deep reasons. The point is that once you know what your daily life is like and how you experience it, it is easier to begin getting control over it. Perhaps the pattern of feelings shows that you should change your job—or learn to bring more flow to it. Or that you should be outdoors more often, or find ways to do some more interesting things with your children. The important thing is to make sure that you spend your psychic energy in such a way that it brings back the highest returns in terms of the quality of experience.

The only way to stay creative is to oppose the wear and tear of existence with techniques that organize time, space, and activity to your advantage. It means developing schedules to protect your time and avoid distraction, arranging your surroundings to heighten concentration, cutting out meaningless chores that soak up psychic energy, and devoting the energy thus saved to what you really care about. It is much easier to be personally creative when you maximize optimal experiences in everyday life.

INTERNAL TRAITS

The next step, after learning to liberate the creative energy of wonder and awe, and then learning to protect it by managing time, space, and activity, is to internalize as many of these supporting structures into your personality as possible. We can think of personality as a habitual way of thinking, feeling, and acting, as the more or less unique pattern by which we use psychic energy or attention. Some traits are more likely than others to result in personal creativity. Is it possible to reshape personality to make it more creative?

It is difficult for adults to change personalities. Some of the habits that form personality are based on temperament, or the particular genetic inheritance that makes one person very shy, or aggressive, or distractible. Temperament then interacts with social environment—

parents, family, friends, teachers—and some habits are strengthened, others weakened or repressed. By the time we are out of our teens, many of these habits are strongly set, and it is difficult to invest attention—to think, feel, or act—in any other way than what our traits allow.

It is difficult, but it is not impossible. Strangely, in our culture we spend billions of dollars trying to improve our looks, but we take a fatalistic attitude toward our personal traits—as if it was beyond our abilities to change them. If all the energy expended on dieting, cosmetics, and dressing up were turned to other uses, we could easily solve the material problems of the world. Yet most of that energy is wasted because how we look, or how much we weigh, is more difficult to change because it is more dependent on genetic instructions than are personality traits. And, of course, improving who we are is a great deal more important than improving how we look.

To change personality means to learn new patterns of attention. To look at different things, and to look at them differently; to learn to think new thoughts, have new feelings about what we experience. John Gardner was by temperament extremely introverted. He was shy and retiring, undemonstrative and unemotional. This worked well for him up to a certain point, but when in his forties he became a foundation officer he realized that he was intimidating the applicants who were coming to ask him for support. As they described their projects, they were hoping to get some reaction, some signal from him, and all they got was noncommittal silence.

At that point he decided to become more extroverted. He forced himself to smile, to make small talk, to show some vulnerability in conversation. It wasn't easy to change these deeply ingrained habits, but every little success made him a much more effective leader and communicator—the domains in which his creativity eventually asserted itself most strongly. He never became an out-and-out extrovert, but he now impresses an interlocutor as warm and caring—which was always potentially a part of his personality, but he had been unable to show it.

If we go through life with habits that are very rigid, or inappropriate to the kind of job we do, the creative energy gets dammed up or wasted. Thus it helps to consider how to apply what we learned about the personalities of creative individuals to the traits that may be useful in everyday life.

Develop what you lack. All of us end up specializing in some traits which usually means that we neglect traits that are complementary to the ones we developed. For example, if someone learns to be very competitive, he or she probably has a hard time cooperating; an intuitive, subjective person usually ends up mistrusting objectivity. Even though Aristotle figured out twenty-five centuries ago that virtue consists in the golden mean between such opposite traits as courage and prudence, we still take the easy way out, which is to be one-dimensional.

As we know, creative individuals tend to be exceptions to this rule. In chapter 3 I presented the ten main dialectic poles that describe their personality. The point here is that everyone can strengthen the missing end of the polarity. When an extrovert learns to experience the world like an introvert, or vice versa, it is as if he or she discovered a whole missing dimension to the world. The same happens if a very feminine person learns to act in what we consider a masculine manner. Or if an objective, analytic person decides to trust intuition for a change. In all of these cases, a new realm of experience opens up in front of us, which means that in effect we double and then double again the content of life.

To start, it makes sense to identify your most obvious characteristic, the one that your friends would use to describe you—such as “reckless” or “stingy” or “intellectual.” If you don’t trust your own assessment, you can ask a friend to help. When you have identified a central trait, you can begin to try its opposite. If you are basically reckless, take a future project, or relationship, and instead of rushing into it plan your moves carefully and patiently. If you are stingy, splurge. If you are an intellectual, get someone to explain to you why football is such a great sport and try watching a ball game in light of this knowledge. Keep exploring what it takes to be the opposite of who you are.

At first it won’t be easy and will seem like a waste of time. Why try to save money when you enjoy being spendthrift? Why trust intuition when you are so comfortable being a rational person? Breaking habits is a little like breaking your own bones. What should keep you trying is the knowledge that by experiencing the world from a very different perspective, you will enrich your life considerably.

Shift often from openness to closure. Perhaps the most important duality that creative persons are able to integrate is being open and receptive on the one hand, and focused and hard-driving on the other. Good scientists, like good artists, must let their minds roam playfully or they will not discover new facts, new patterns, new relationships. At the same time, they must also be able to evaluate critically every novelty they encounter, forget immediately the spurious ones, and then concentrate their minds on developing and realizing the few that are promising.

Because this is such a central trait, it is particularly important to practice it. Take some task you often do at your job—for instance, writing a weekly report on a project you are involved in. Start with relaxing your mind; look out the window if you can, or let your eyes roam unfocused over the desk and the office. Now try to grasp what are the most important issues about the project. Grasp not only intellectually but also at a gut level, emotionally. What’s *really* important? What gives you a good feeling about it? What scares you? Or try to get images in your mind, like scenes in a film. Picture the people involved in the project. What are they doing? What are they saying to each other?

Then start jotting down some words on a pad, or on the computer. Any word that comes to mind concerning your feelings about the project or the movie in your mind. Words that describe facts, or events, or persons. When you have a few words down, see if you can string them together into a story—it should not be too difficult. The story you glimpse at this stage represents your strongest feelings about what is happening on the project.

It is at this point that the emphasis might shift from openness to discipline. Begin to choose words carefully, keeping in mind the goals of your department, division, or the corporation as a whole, as well as the interests, tastes, and prejudices of the bosses who will read the report. You want to be effective and convincing. So muster all your skills to write a report that conveys your beliefs as clearly and succinctly as possible. If you manage to be intuitively receptive at the beginning, and rationally critical later on, the report will be considerably more creative than if you relied exclusively on one of these strategies.

Shifting from one of these poles to the other is important also in

relationships—between friends, spouses, or parents and children. For a relationship to work, it is essential to listen to the other person, to try to imagine why she says what she says, what she feels, how she sees the world. It is essential to change perspectives when necessary—to compromise, to understand the world and to act differently because this is what the other person's reality requires. Yet it is just as important to remain in touch with our own beliefs and perspectives. In a relationship we should be able to shift moment by moment from our own viewpoint to that of the other. We can see depth only because looking with two eyes gives us slightly different perspectives. How much deeper can we see when instead of two eyes we rely on four! This dual vision again doubles the riches of the world we experience and makes it possible to react creatively to it.

Aim for complexity. The ability to move from one trait to its opposite is part of the more general condition of psychic complexity. Complexity is a feature of every system, from the simplest amoeba to the most sophisticated human culture. When we say that something is complex we mean that it is a very differentiated system—it has many distinctive parts—and also that it is a very integrated system—the several parts work together smoothly. A system that is differentiated but not integrated is complicated but not complex—it will be chaotic and confusing. A system that is integrated but not differentiated is rigid and redundant but not complex. Evolution appears to favor organisms that are complex; that is, differentiated and integrated at the same time.

Complexity also is a feature of human personality. Some people are integrated but not very differentiated: They hold on to a few ideas, opinions, or feelings. They are predictable. They come across as boring, one-dimensional, rigid. There are others who express many opinions, who are changeable and constantly striving to accomplish something new and different, but who give the impression that they have no center, no continuity, no ruling passion. They have a differentiated consciousness that is not well integrated. Neither of these ways of being is very satisfying.

As we have seen, creative individuals seem to have relatively complex personalities. Neither the centrifugal nor the centripetal force prevails—they are able to keep in balance the contrary tendencies that make some people turn inward until each becomes a hard shell,

and others fly outward at random. A creative person is highly individualized. She follows her own star and creates her own career. At the same time, she is deeply steeped in the traditions of the culture; she learns and respects the rules of the domain and is responsive to the opinions of the field—as long as those opinions do not conflict with personal experience. Complexity is the result of the fruitful interaction between these two opposing tendencies.

But psychological complexity is not just a luxury reserved for creative individuals. Every person who wants to realize fully the potentiality of what it is to be human, and who wants to take part in the evolution of consciousness, can aim for a more complex personality. To do so we need to explore and strengthen those traits that are now lacking, to learn to shift from openness to discipline, within a context of curiosity and awe for the miracle of life. The notion of complexity adds a deeper layer of understanding of why it is important to achieve this. By fully expressing the tendencies of which we are capable, we become part of the energy that creates the future.

THE APPLICATION OF CREATIVE ENERGY

Up to now I have said nothing about the role of thinking in personal creativity. The reason is that if motivations, habits, and personality traits are in place, most of the job is done. It is inevitable that one's creative energies will start to flow more freely. Nevertheless, it is also useful to consider what kind of mental operations expedite novel solutions to problems in the domain of daily life.

Problem Finding

Creative people are constantly surprised. They don't assume that they understand what is happening around them, and they don't assume that anybody else does either. They question the obvious—not out of contrariness but because they see the shortcomings of accepted explanations before the rest of us do. They sense problems before they are generally perceived and are able to define what they are.

The reason we consider the artists of the Renaissance so creative is that they were able to express the emancipation of the human spirit from the shackles of religious tradition before the humanist scholars or anyone else did. The use of perspective in painting broke down the flat hierarchical order of Byzantine composition. The introduc-

tion of expression, movement, and everyday subject matter into pictorial art lifted human experience to the level of importance previously occupied by static representations of religious ideas. Without expressly intending to, without a clear understanding of the consequences of their actions, the Renaissance artists changed our perspective on the world.

The creativity of artists in this century also consisted in formulating a new visual perspective on the human condition, albeit a much more pessimistic one this time. The experiments with cubism, abstraction, and expressionism in the visual arts, in music, and in literature were precursors of relativism in the social sciences and deconstructionism in philosophy. They expressed in visible form the problems of our age: The lack of a common set of values, the suspicion of ultimate beliefs, the loss of faith in progress brought about by two world wars and their horrors—these were prefigured in the distorted, anguished, and random representations that populate modern art.

If you learn to be creative in everyday life you may not change how future generations will see the world, but you will change the way *you* experience it. Problem finding is important in the daily domain because it helps us focus on issues that will affect our experiences but otherwise may go unnoticed. To practice this skill you might try the following suggestions.

Find a way to express what moves you. Creative problems generally emerge from areas of life that are personally important. We have seen that many individuals who later changed a domain were orphaned as children. The loss of a parent has a huge impact on a young person's life. But what, exactly, is this impact? Does the sadness include a feeling of relief? Of heightened responsibility? Of freedom? Of increased closeness to the surviving parent? Unless one finds words, ideas, or perhaps visual and musical analogies to represent the impact of the loss on one's experience, it is likely that the parent's death will cause violent pain at first, a generalized depression later, and with time its effects will disappear or work themselves out unconsciously, outside the range of rational control.

Other problematic issues in early life include poverty, illness, abuse, loneliness, marginality, and parental neglect. Later in life the main reasons for unease may involve your job, your spouse, or the

state of the community or of the planet. Lesser concerns may derive from a temporary threat: the scowl of a boss, the illness of a child, the change in the value of your stock portfolio. Each of these is likely to interfere with the quality of life. But you will not know what ails you unless you can attach a name to it. The first step in solving a problem is to find it, to formulate the vague unease into a concrete problem amenable to solution.

Look at problems from as many viewpoints as possible. When you know that you have a problem, consider it from many different perspectives. How you define a problem usually carries with it an explanation of what caused it. Our first impulse is to label problems by relying on tried-and-true prejudices. If we have a disagreement with our spouse we immediately assume that we are innocent and the fault is with the other party. This may be true some of the time but certainly not always. The most realistic assumption is that both parties are at fault, and the question is to understand what motivated each partner to take his or her position in the argument.

Also, although the argument may be ostensibly about one thing, for instance, money, don't assume that appearances are true. The disagreement really may be about financial decision making and hence about power; or it might be about lack of respect or about inequality in the amount of psychic energy invested in the relationship. How you identify the nature of the problem is critical for the kind of solution that will eventually work.

Creative individuals do not rush to define the nature of problems; they look at the situation from various angles first and leave the formulation undetermined for a long time. They consider different causes and reasons. They test their hunches about what really is going on, first in their own mind and then in reality. They try tentative solutions and check their success—and they are open to reformulating the problem if the evidence suggests they started out on the wrong path.

A good way to learn problem finding in everyday life is to stop yourself when you sense you have a problem and give it the best shot at a formulation. If someone has been promoted ahead of you, you might define the problem as "This happened because the boss dislikes me." As soon as you do this, *reverse the formulation*: "It happened because I dislike the boss." Does this way of looking at the problem

make sense? Could it be at least partly true? And then immediately consider a few more alternatives: "It happened because I haven't kept up with the changing job as much as I should have" or "Lately I have been too distraught by what happens at home, and it affected my performance." Which formulation comes closest to representing the problem? Perhaps each is true to a certain extent, and your colleague's promotion was overdetermined by several unrelated causes.

It is possible that you eventually decide that the fact that you didn't get promoted is no problem at all. Being passed over may give you more time to spend at home, to learn something new, to devote your psychic energy to some other task. You may come to realize that the problem was your competitiveness, your ambition, the fact that you invested all your energies in advancing on the job rather than doing a good job for its own sake, or living more fully. So the failed promotion, instead of being the problem, is really the first step to the solution of a more fundamental problem.

Perhaps none of these formulations is "right" in the sense that it identifies correctly the causes of the event. Nevertheless, it is extremely important to identify the nature of the problem, because what you will do next depends on it. By naming the problem and attributing a cause to it you will shape not only the past but, more important, the future. It is in this sense that the lives of creative individuals are less determined than most of our lives. Because they pause to consider a greater range of possible explanations for what happens to them, they have a wider and less predictable range of options to choose from.

Figure out the implications of the problem. Once you have created a formulation, you can begin to entertain possible solutions. Of course, solutions even to a simple problem like "Joe was promoted ahead of me" vary incredibly depending on how you formulated it and therefore what causes you attributed to it. Solutions might include finding interests outside the job, or learning to understand and to like the boss, or catching up on job skills—or a little of each.

At this stage, too, it pays to consider a variety of solutions, to entertain different possibilities. Creative individuals experiment with a number of alternative solutions until they are certain that they have found the one that will work best. Again, as soon as you think of a

good solution, it is useful to think of an opposite one. Even the most experienced person is often unable to tell in advance, just by thinking, which solution will do the trick. So first trying one way of going about the problem, then trying another tack for a while, and then comparing results often yields the most creative result. It is good to be quick and consistent. But if you wish to be creative you should be willing to run the risk of sometimes seeming indecisive.

Implement the solution. Solving problems creatively involves continuous experimentation and revision. The longer you can keep options open, the more likely it is that the solution will be original and appropriate. Artists who do more original work change their technique as they are painting, and their paintings develop on the canvas in less predictable ways than those of less original artists. This is because the original artist is more ready to learn from the emerging work; he or she is alert to the unexpected and is willing to go with a better solution if one presents itself. Similarly, creative writers often start a story without knowing how it will end; the ending emerges as they follow the logic of the evolving story.

How does this apply to creativity in the domain of everyday life? To take an absurdly trivial example, if you are giving a party and want to make sure that the seating arrangement around the dinner table is the most appropriate for a good mixing of the guests, it makes sense to prepare a seating plan. But if by the time dinner is ready you notice that some of the guests whom you had scheduled to sit side by side seem cool toward each other, you may want to change the plans at the last moment. And if the dinner turns out to be dull, you should try to match up people in different combinations for coffee and dessert.

Such flexibility works only if you keep paying close attention to the process of solution and if you are sensitive enough to the feedback so that you can correct the course as new information becomes available. The reason most people prefer routine, tried-and-true solutions to their problems is that this requires less psychic energy. In fact, we could not afford to be creative all the time because we would soon stretch the limits of attention and collapse. Routine results in great savings. But it makes good sense to know how to come up with a creative solution when we need one and can spare the effort.

Divergent Thinking

Not all thinking involves the solution of problems. Sometimes we are asked to respond to what other people say, or to produce ideas in response to events, without having a particular problem that needs to be formulated and solved. There are more or less creative ways to pursue these less focused mental tasks. In talking to a friend, I can use trite phrases or I can try to say things in a fresh, topical way that more closely represents what I feel at the moment. I can use stock images or try for more vivid ones, based on common experiences.

Most commercial programs designed to increase individual creativity focus on this particular aspect. They try to enhance three dimensions of divergent thinking that are generally held to be important to creativity: fluency, or the knack for coming up with a great number of responses; flexibility, or the tendency to produce ideas that are different from each other; and originality, which refers to the relative rarity of the ideas produced. Brainstorming programs are ways to stimulate people to increase the fluency, flexibility, and originality of their ideas and responses. You can obtain the same results by taking things in your hands and following these suggestions.

Produce as many ideas as possible. If you have to write a thank-you note, a report, or a letter, identify a key word and then try to generate as many synonyms for it as possible. If you get stuck, turn to a thesaurus. Or instead of words that mean the same thing, shift to meanings that are similar but lead in different directions. At first go for quantity; later you will be critical and edit for quality.

If you are planning a weekend or a vacation, do the same thing. First, come up with as many options as you can think of, even if they are not all very sensible. A crazy suggestion may jolt you into thinking in new directions and lead to more acceptable alternatives you would not have considered otherwise. If you are shopping for clothes in a department store, don't just go straight to the familiar floor but try on the greatest variety time allows. Browse for books outside the accustomed categories. If your boss asks for an opinion, don't give only the predictable pet viewpoint based on your interests. Surprise her with a whole range of ideas, options, and possibilities—how wild you can afford to be depends on how conservative she is.

Have as many different ideas as possible. Quantity is important, but try to avoid redundancy. Variety in conversation, in the selection of music, in a menu, is generally appreciated. It pays off to learn how to alternate topics of conversation, types of restaurants, kinds of shows, ways of dressing. Robert Galvin of Motorola trained himself to do a simple mental exercise: Whenever someone says something, he asks himself, What if the opposite were true? Imagining alternatives to what others hold to be true is probably going to be useless 99 percent of the time. But that one other time the practice of flipping to a divergent perspective might generate an insight that is not only original but also useful.

Try to produce unlikely ideas. Originality is one of the hallmarks of creative thinking. If asked to come up with names for a baby, or ways to use a paper clip, or things to do at a party, a creative person is likely to give answers that are different from the answers of the majority. But these answers won't be bizarre. Once people hear them, they are likely to say, "Of course! Why didn't I think of it myself?"

It is more difficult to learn how to think in original ways than to learn how to be fluent and flexible. It requires cultivating a taste for quality that is not necessary for the other two. One exercise involves taking a random paragraph from the paper each day and seeing if you can find unique, more memorable ways of expressing the same ideas. If the paragraph is too dull or obscure, substitute another. Or you can look at your office or your living room, and ask yourself whether it reflects your personal taste, and if not, what you could do to bring it in closer harmony with your unique self.

If your job involves frequent meetings and conferences, you might cultivate the habit of jotting down brief summaries of what the others around the table have said. Then you can quickly generate alternative positions to those that have been expressed, or integrate the various perspectives in a more comprehensive perspective. Instead of stating views that are based on your previous positions, use the lines of force emerging in the meeting to suggest new ways of thinking about the issues.

To think in a divergent mode requires more attention than thinking in the usual convergent style. As usual, it takes more energy to be

creative than to be a routine thinker. Therefore, you must choose when to try for creativity and when not to; otherwise you might burn yourself out in a blaze of intense originality.

Choosing a Special Domain

If creativity consists in changing a particular domain, then personal creativity consists in changing the domain of personal life. We call a physicist creative if he or she changes the way physics is practiced; a person who can change his or her own life we call personally creative. The domain of personal life consists of the rules that constrain psychic energy, the habits and practices that define what we do day in, day out. How we dress, how we work, how we conduct our relationships define this domain, and if we can improve on it, the quality of life as a whole is improved. The suggestions in this chapter have been about how to increase creativity in the domain of everyday life.

But even though personal life can be very complex, it is also limited in scope. Much of what makes life interesting and meaningful belongs to special domains: Music, cooking, poetry, gardening, bridge, history, religion, baseball, and politics are symbolic systems with their own special rules, and they exist outside any individual's life. They and thousands of other such systems make up culture, and we become human by seeing the world through the lenses they provide. A person who learns to operate by the rules of one of these domains has a chance to expand enormously the range of his or her creativity.

Too many people assume that most of the world is off-limits to them. Some consider art as being beyond the realm of possibility; others sports or music. Or dancing, science, philosophy—the list of things that are “not for me” can be endless. And it is true that some domains just don't agree with some people. But generally the problem is that cultural resources are underutilized. Either because of ignorance, low self-esteem, or habits of thought established early, we discount the possibility that we could enjoy and be good at many of the things that make others happy. It took several years of jail for Malcolm X to realize the power of religion and of politics, and to discover that he had gifts for both.

Few of us know in advance what domains we may have an affinity for. Prodigies are children who from an early age show a definite gift in some direction, but most of us are not prodigies and it takes us

decades of trial and error to find out what we are best cut out for. Even in our sample, some individuals did not realize what their vocations were until they were middle-aged. And often the realization was forced on them by outside factors, such as a war or the necessity to do something that then turned out to be just right.

It is important to try as many domains as possible. Start with things you already enjoy and then move to related domains. If you like to read biography, you might try history. Swimming may lead to skin diving, to scuba, and then—why not?—to skydiving. Learning to operate within a new domain is always difficult, and love at first sight is rare. A certain amount of persistence is necessary. On the other hand, it makes no sense to persevere in an activity that gives no joy, or the promise of it.

Eventually you should be able to find one or more domains that fit your interests, things that you enjoy doing and that expand your life. Ideally we should be able to do so in as many domains as possible. But in practice the limits on psychic energy make it impossible to take on more than a few discrete activities seriously.

There are two dangers as you become involved in a domain. The first is addiction; some domains are so seductive that you may invest so much attention into it that you have none left for your job and family. Some chess players become so taken by the game that to all intents and purposes they become zombies; the same can be true of betting on horses, collecting art, studying the Bible, or cruising the Internet.

The other danger is the opposite: You can become so diffuse, so eclectic, that what you feel in different domains ends up being the same superficial experience. Like the traveler who goes everywhere and is still the same boring, provincial soul he was before he left, many people seem to gain nothing from sampling the best that the culture has to offer. As is usually the case, the best solution does not lie with the extremes.

As you learn to operate within a domain, your life is certainly going to become more creative. But it should be repeated that this does not guarantee creativity with a capital *c*. You can be personally as creative as you please, but if the domain and the field fail to cooperate—as they almost always do—your efforts will not be recorded in the history books. Learning to sculpt will do wonders for the quality of your life, but don't expect critics to get ecstatic, or collectors to

beat a path to your door. The competition among new memes is fierce; few survive by being noticed, selected, and added to the culture. Luck has a huge hand in deciding whose *c* is capitalized. But if you don't learn to be creative in your personal life, the chances of contributing to the culture drop even closer to zero. And what really matters, in the last account, is not whether your name has been attached to a recognized discovery, but whether you have lived a full and creative life.

APPENDIX A

BRIEF BIOGRAPHICAL SKETCHES OF THE RESPONDENTS WHO WERE INTERVIEWED FOR THIS STUDY

Adler, Mortimer J. Male. b. 12/28/02. Philosopher, author. American. Recipient, Aquinas Medal, American Catholic Philosophical Association (1976). Honorary Trustee, Aspen Institute for Humanistic Studies (1973-). Author, *How to Read a Book* (with Charles Van Doren, 1940); *Six Great Ideas* (1981); *The Paideia Program* (1984). Chairman of the board of editors, *Encyclopedia Britannica* (1974-). Associate editor, *Great Books of the Western World* (1945-; editor in chief, 2d ed., 1990), *Syntopicon* (1952, 1990); editor in chief, *The Annals of America* (21 vols., 1968). See his *Mortimer J. Adler: Philosopher at Large* (1977). Interviewed by Kevin Rathunde (1/17/91). Age 88.

Anderson, Jack. Male. b. 10/19/22. Journalist, author, writer. American. Recipient, Pulitzer Prize for national reporting (1972). Author, *The Anderson Papers* (with George Clifford, 1973); *Fiasco* (with James Boyd, 1983); others. See his *Confessions of a Muckraker* (with James Boyd, 1979). Interviewed by Kevin Rathunde (5/6/91). Age 68.

Asner, Edward. Male. b. 11/15/29. Actor. American. Recipient, five Golden Globe awards; seven Emmy awards. President, Screen Actors Guild (1981-1985). Roles in theater, motion pictures, and television, including *The Mary Tyler Moore Show* (TV series, 1970-1977); *Roots* (TV miniseries, 1977); *Lou Grant* (TV series, 1977-1982). Interviewed by Kevin Rathunde (4/30/91). Age 61.